

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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**RECEIVED**

03-02-2005

**VESUVIUS**  
Intellectual Property Dept.

**PCT**

## NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

01.02.2005

Applicant's or agent's file reference  
1381 WO

## IMPORTANT NOTIFICATION

International application No. PCT/BE 03/00211	International filing date (day/month/year) 08.12.2003	Priority date (day/month/year) 10.12.2002
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Applicant  
VESUVIUS GROUP S.A. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/MB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international  
preliminary examining authority:



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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1381 WO	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/BE 03/00211	International filing date (day/month/year) 08.12.2003	Priority date (day/month/year) 10.12.2002
International Patent Classification (IPC) or both national classification and IPC B22D41/28		
Applicant VESUVIUS GROUP S.A. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
  
2. This REPORT consists of a total of 4 sheets, including this cover sheet.  
 This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
These annexes consist of a total of 1 sheets.
  
3. This report contains indications relating to the following items:  

I	<input checked="" type="checkbox"/>	Basis of the opinion
II	<input type="checkbox"/>	Priority
III	<input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	<input type="checkbox"/>	Lack of unity of invention
V	<input checked="" type="checkbox"/>	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	<input type="checkbox"/>	Certain documents cited
VII	<input type="checkbox"/>	Certain defects in the international application
VIII	<input type="checkbox"/>	Certain observations on the international application

Date of submission of the demand 12.05.2004	Date of completion of this report 01.02.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Noske, W Telephone No. +49 89 2399-8448



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/BE 03/00211

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-4 as originally filed

**Claims, Numbers**

1-9 received on 06.01.2005 with letter of 06.01.2005

**Drawings, Sheets**

1/2, 2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/BE 03/00211

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-9
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-9
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/BE 03/00211

1. D1 US-A-5 695 674, Figs. 1-5,  
discloses a refractory plate 8 having upper and lower surfaces and a plane protruberance in the form of a frustoconical tab raising from a side portion of one of the said surfaces; the plate 8 is provided with a throughhole forming a casting channel and passing through the center of the said excentrically located tab. The plane surface (without protruberance) is "able to form a sealing surface, at least around the orifice" formed by the casting channel, "with a face matching the face of a"(n adjoining) "sliding plate".  
The opposed surface (from where the protruberance rises) is able or "adapted to rest in a housing".  
The plane surface of the protruberance is able or "adapted to form a sealing surface, at least around the orifice, with a matching face of a refractory nozzle and to act as a guiding surface for the refractory nozzle".
2. The sole feature of claim 1 which departs from D1 is the "tip-"shape of the plane surface ("third surface" of claim 1) of the protruberance. Novelty is thus given.
3. An inventive step lying in the said "tip-" shape cannot be acknowledged in the absence of any effect which can be attributed to the "tip-" shape independently from further features of the "device for the insertion and/or removal of a nozzle for a casting installation combined with a sliding plate flow-control device" for or in which device the claimed refractory plate is to be used according to claim 1, which further features do, however, not appear in a non-optional form in claim 1.  
The subject-matter of claim 1 does not involve an inventive step.
4. The features mentioned in the dependent claims 2-9 are of no importance for solving any problem with respect to the known plate 8 of D1 in view of what was mentioned above under point 3. Their subject-matter thus lacks an inventive step.
5. With respect to the lack of inventive step further remarks are made as follows:  
The claims define a refractory plate which is intended to form a portion of a bigger device for exchanging a casting nozzle and regulating flow of cast metal through the device.  
The claimed plate is defined with reference to its function within the complete device and to other portions of the device which are necessary to the function (e. g. mobile plate and refractory tube, the claimed plate and each of the said other portions claimed to have "matching faces", housing claimed to form a "rest" for a portion of the claimed plate). However, the said other portions are neither disclosed nor defined in the application. Without this, the claimed invention is not clear and any effect of any claimed novel features cannot be ascertained. It is thus not possible to ascertain an inventive step which is thus not acknowledged.

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Claims

1. Refractory plate for a device for the insertion and/or removal of a nozzle for a casting installation combined with a sliding plate flow-control device comprising
  - 5 a first surface (1) provided with an orifice (2) defining the entry of a casting channel (3) through the plate and able to form a sealing surface, at least around the orifice (2), with a face matching the face of a sliding plate of the flow-control device;
  - 10 b) a second surface (4) adapted to rest in housing of the device and provided with a plane protuberance (5) circumscribing the casting channel (3) and extending through the bottom wall of the housing, and
  - 15 c) a tip-shaped third surface (6) defined by the plane surface of the protuberance (5) provided with an orifice (7) defining the exit of the casting channel (3) through the plate, the surface (6) being adapted
    - to form a sealing surface, at least around the orifice (7), with a matching face of a refractory nozzle in casting position, and
    - to act as guiding surface for the refractory nozzle from an introduction position to a casting position,  
the tip (8) being directed towards the introduction position of the refractory nozzle.
- 20 2. Refractory plate according to claim 1, characterized in that the third surface (6) is provided with a chamfer at the end of the tip (8).
3. Refractory plate according to claim 1 or 2, characterized in that the third surface (6) is provided with a chamfer on the side opposite to the end of the tip (8).
4. Refractory plate according to claim 1, characterized in that the third surface (6) is oval-shaped.
- 25 5. Refractory plate according to claim 1, characterized in that the third surface (6) is triangle shaped.
6. Refractory plate according to claim 1, characterized in that the third surface (6) is egg-shaped.
- 30 7. Refractory plate according to claim 1, characterized in that it is provided with inert gas supplying means.
8. Refractory plate according to claim 7, characterized in that the inert gas supplying means comprises a gas feeding line (9) and a circular groove (10) circumscribing the exit orifice (7) of the casting channel in the third surface (6).
- 35 9. Refractory plate according to claim 1, characterized in that the third surface (6) is provided with a second orifice (11) close to the end of the tip (8).